



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590



REPLY TO THE ATTENTION OF

Matthew Stuckey
Branch Chief
Permits Branch
Office of Air Quality
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, Indiana 46204

Dear Mr. Stuckey,

On September 19, 2011, the U.S. Environmental Agency received notification of the Indiana Department of Environmental Management's (IDEM) intent to issue a major modification and operating permit for the addition of eight Coal Bed Methane (CBM)-fired Reciprocating Internal Combustion Engines (RICE) for Hoosier Energy REC, Inc.'s Merom Generating Station (Hoosier – Merom) located in Sullivan, Indiana. The project also includes the construction of one CBM-fired standby flare, two CBM dehydrator units and four cooling towers. The draft Prevention of Significant Deterioration (PSD) construction permit (Permit No. 153-29394-00005) and draft Part 70 operating permit (Permit No. 153-29410-00005) will allow the facility to generate electricity for sale to the grid. Hoosier – Merom has requested minor source limitations to limit the emissions increases from the project to below the PSD significance thresholds for carbon monoxide (CO), volatile organic compounds (VOC) and nitrogen oxides (NOx). The project will exceed the PSD threshold for greenhouse gases (GHGs) and will require Best Available Control Technology (BACT) limits for GHGs. The draft permit proposes GHG BACT to be energy efficient design of the engines, good combustion practices, and catalytic oxidation. The GHG BACT includes an emission limit of 1100 lb/MW-hr of carbon dioxide (CO₂), 9.50 lb/MW-hr of methane (CH₄), and 0.23 lb/MW-hr of nitrous oxide (N₂O) from each RICE. The GHG BACT includes emission limits of 2940 lb/hr of CO₂, 0.06 lb/hr of CH₄, and 0.05 lb/hr of N₂O for the CBM-fired flare and an emission limit of 58.32 lb/hr of CO₂ for the CBM dehydrator units.

Based on our review of the draft PSD/Title V permit, we have the following comments. We provide these comments to help ensure that the project meets federal Clean Air Act (CAA) requirements, that the permit will provide necessary information so that the basis for the permit decision is transparent and readily accessible to the public, and that the permit record provides adequate support for the decision.

1. The Technical Support Document lists the potential to emit (PTE) of GHGs as CO₂e (CO₂-equivalent) consisting of the combined emissions of CO₂, CH₄ and N₂O emissions. If any other GHG are emitted from units at the source, please ensure that the CO₂e PTE accounts for them. As an example, this source may have circuit breakers that could have fugitive

emissions of sulfur hexafluoride.

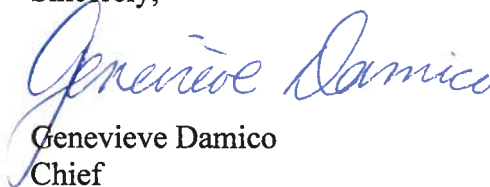
2. The averaging time for the GHG emission limits is not specified in the draft permit. EPA recommends that IDEM consider establishing a 30-day rolling average or a 12-month rolling average emissions limit, in order to account for the cumulative impact of GHG emissions.
3. The Compliance Determination Requirements in section D.7.5 of the draft permit require emission testing of CO₂ for the RICE, but it is unclear how compliance will be determined for the non-CO₂ GHG emissions. Since CH₄ is the primary fuel burned in the RICE, EPA recommends that IDEM also consider emission testing of CH₄ and develop a method to calculate emissions of any other GHG(s) that may be emitted by the RICE units (e.g., reliance upon established fuel factors, such as those contained in EPA's Greenhouse Gas Mandatory Reporting Rule at 40 CFR 98). Furthermore, the draft permit needs to contain monitoring and recordkeeping requirements to assure compliance with the GHG BACT emission limits. This applies to the GHG emissions from the CBM RICE, CBM flare and CBM dehydrator.
4. The draft permit does not contain compliance determination or monitoring requirements for the emissions of CO, VOC, NO_x, and GHG from the CBM-fired flare and the CBM dehydrator. Please include these requirements in the final permit.
5. The GHG BACT determination includes the use of good combustion practices for the RICE, but these practices are not listed in the permit record. In the final permit, please describe the types of good combustion practices that will be used.
6. Section D.7.5 requires emissions testing of 2 out of the 8 CBM RICE units at 180 days after startup and every 5 years thereafter. EPA recommends that IDEM include a rotational schedule in the final permit to ensure that not the same RICE units are tested each time. Also, we note that the 5-year emissions testing requirement applies to NO_x, VOC, and CO, but not CO₂. Will there be a regular testing interval for CO₂ emissions from the RICE in the final permit?
7. The testing interval of 2 CBM RICE units every 5 years equates to 20 years between testing for each RICE, assuming the RICE are rotated each interval (recommended in the above comment). Given that the RICE will have synthetic minor limits for NO_x, VOC and CO to avoid PSD applicability, IDEM should consider more frequent testing to ensure that the units are in compliance with the minor source limits at all times.
8. Please ensure all applicable portions of 40 CFR Part 60, Subpart JJJJ (Spark Ignition Engine New Source Performance Standard) are included in the final permit. Specifically, if the CBM RICE units are not certified engines, other portions of the NSPS (e.g., testing and monitoring) will likely apply to these units and the final permit should reflect these requirements.
9. Section D.7.6 (ii) refers to a secondary monitoring system in the event that the continuous emissions monitoring system (CEMS) is not in operation. It is unclear what is required by

the secondary monitoring system (e.g., specific requirements, calibration or certification). Will catalyst bed temperature readings be taken at the same frequency as the CEMS? Please provide additional information in the final permit.

10. IDEM has made several corrections to the process weights of the existing facility. Since the process weight rate and limits correspond to particulate matter emissions, please ensure that these corrections and new emission limits do not change the status of a previous project and will not contribute to violations of the CAA.

Again, we appreciate the opportunity to provide comments on this draft permit. Please feel free to contact me or have your staff contact Charmagne Ackerman, of my staff, at (312) 886-0448.

Sincerely,



Genevieve Damico
Chief
Air Permits Section